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MotherCare™ Matters

A Quarterly Newsletter and Literature Review on Maternal and Neonatal Health and Nutrition

Behavioral Dimensions of Maternal Health & Survival

A Consultative Forum Co-sponsored by MotherCare, The CHANGE Project, and The World Health Organization

Introduction

To improve maternal and newborn health and survival, MotherCare has used the complementary strategies of:

- Raising awareness of and encouraging behaviors of women, families and other community influentials for healthy self-care and care-seeking, specifically focused on anemia, safe birth, and essential obstetric care, and
- Strengthening the performance of front-line providers and their organizational networks to address anemia reduction, provide a safe birth, and manage complications adequately through a women-centered approach.

The Consultative Forum, *Behavioral Dimensions of Maternal Health and Survival* (June 3-5, 2000), focused on the first of these two strategies. Co-sponsored by MotherCare, The CHANGE Project, and the World Health Organization, the Forum followed on a previous meeting that explored the second strategy entitled: Improving Provider Performance: The Skilled Birth Attendant. The discussion and recommendations of that meeting are available in the form of a policy brief that can be accessed at MotherCare's website:

http://www.jsi.com/intl/mothercare/home.htm.

The Consultative Forum aimed to:

- Examine the progress and gaps in the field of behavior change,
- Develop an understanding for the behavioral issues pertinent to maternal health and survival,
- Assess MotherCare's behavior change strategies and outcomes for maternal health (e.g., anemia) and survival, and
- Recommend priorities for future efforts aimed at enhancing maternal health and survival.

The three themes selected to organize the content and deliberations of the Consultative Forum included:

- Self-care and care-seeking: decision-making for maternal health and survival,
- Relationships among professional providers and between providers and clients, and
- Building bridges between communities and services.

This issue of MotherCare Matters describes the discussions of the Forum within these themes, with the aim of placing the MotherCare efforts for improving maternal health and survival in the broader context of behavior change in the field of public health. We would like to acknowledge Oona Campbell's (*London School of Hygiene & Tropical Medicine*) assistance in synthesizing the deliberations of the Forum and in formulating an

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outline for this report. In addition, Marilyn Rice's (*The World Health Organization*) initiative to comprehensively document the Forum presentations and discussions, with the assistance of Edna Jonas, in the form of a WHO publication is appreciated since it is a valuable contribution to the existing literature focusing on Safe Motherhood and behavior change in public health. The Population Reference Bureau, with the leadership of Nancy Yinger and Elizabeth Ransom, will soon disseminate a document, primarily for policymakers, that will highlight the lessons and recommendations gleaned from both the Consultative Forum focusing on behavioral dimensions of maternal health and survival as well as MotherCare's meeting focusing on improving the performance of providers.

The co-sponsors of the behavior change Consultative Forum remain indebted to the numerous presenters and participants of the Forum (Appendix 1) whose diverse contributions enriched the current thinking regarding the behavioral dimensions of maternal health and survival.

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Approaches to Improving Maternal Health

There are several basic approaches to changing behaviors that can lead to improved maternal health and survival, and participants in the Consultative Forum did not agree on any single best approach. Some participants advocated a systematic, theory-based approach to designing, implementing, monitoring, and evaluating behavior change interventions. Others voiced strong concern over the notion of health specialists deciding on and then promoting "key behaviors" that women and influential family members need to follow in order to improve maternal health. The latter group preferred that maternal health programs should facilitate a process of community education that stimulates actions determined and planned by the community.

These differences in opinion can be reduced to three questions:

A. *Who should decide what health or other problems to address?*

B. *Who should decide what strategy and actions should be implemented?*

C. *Who should take these actions?*

The answer to any of these questions may fall on a continuum, from communities alone on one extreme to medical and health professionals alone at the other extreme. In general, most participants favored some point between the extremes of the continuum, but the extremes also had their advocates.

Who should decide what health or other problems to address?

For health professionals, epidemiological facts often dictate the prioritization of health problems. If statistics indicate that hemorrhage is the primary cause of maternal mortality, then (assuming feasible interventions exist) that problem should be the program's first priority. The goal, according to behavioral specialists, is to define the behavior(s)[1] that most affects this outcome. The likelihood of success in influencing the intent to change behavior is greatest when interventions focus on the promotion of a few behaviors (ideally one) and when the behavior is as specific as possible. The use of theoretical models focusing on the determinants of behavior (e.g. attitudes, norms, self-efficacy) can assist program planners in developing the logic that underpins the prioritization and selection of behaviors relevant within a particular context in order to increase the effectiveness of behavioral interventions.

In contrast, proponents of a "social change" approach to maternal health and gender issues support the idea of communities deciding what health or other problems they wanted to address, often after consciousness-raising via PRA (Participatory Rural Appraisal) or other community empowerment approaches. Some who favored a major role for the community in answering this question felt that community choices should not be left completely open, in part because (male-dominated) communities might never consider maternal health as a priority concern. These participants favored a "guided" community mobilization approach where the goal is specified, such as developed by the Warmi Project in Bolivia implemented by Save the Children, with support from MotherCare. In this approach, the program facilitated a process of community discovery and analysis toward the goal of improving maternal and newborn health, which the communities themselves widened to include reproductive health.

External stakeholders (e.g. donors, national policy-makers) may have difficulties with either approach. It was noted that the expectations of stakeholders often deter planners from focusing on a few simple and specific behaviors within their programs. Some participants highlighted that donor requirements may not allow a strong social mobilization approach, since donors often require

[1]A behavior of a specific individual or groups should be defined according to four parameters: action, target, context, and time. For example, women must go or be taken (action) to the appropriate health care facility (target) when specific danger signs and symptoms appear during pregnancy, delivery, and the postpartum period (context) immediately (time).

implementing organizations to propose specific indicators (related to activities, service utilization, health status, etc.) that they intend to change, and sometimes, the level of change, even before they have begun any significant interaction with communities. In addition, the time frames of projects may pose a constraint to the implementation of participatory approaches required to mobilize communities for social change.

Who should decide what strategy and actions should be implemented?

On this issue also, there was a range of opinions. Some participants thought that health and behavioral specialists should determine the strategy and actions, albeit with substantial input from mothers, families, communities, and health providers obtained via formative research. Stronger advocates of community mobilization and social change, however, very much favored mothers and communities deciding on strategy and actions. In fact, examples of successful projects using both approaches were presented at the Forum. Increases in health care utilization by marginalized populations were observed both in MotherCare projects (Guatemala, Bolivia) that were developed after extensive formative research with communities as well as in a more participatory project, implemented by Save the Children in Bolivia, that involved the community in reviewing, analyzing, prioritizing, and developing strategies to improve specific health indicators.

Box 1—Approaches & Tools for Behavior Change

Approaches for Prioritizing Behaviors

Based on a review of existing information and new formative research, a project's research team and representatives of collaborating organizations and communities can score and rank alternative behavioral problems, barriers, and barrier-reducing actions by such criteria as: importance to program impact and feasibility to change given such program variables as time, funding, human, and other resources. Such a systematic analysis can help prioritize both maternal health problems and program actions.

Approaches & Tools for Behavioral Diagnosis

There are two basic approaches to formative research, as noted above. One is to facilitate communities' exploring, learning about, and analyzing their problems related to maternal health. These may be general community mobilization methodologies or ones developed with a focus on maternal health, such as auto-diagnosis/Warmi. A variation on community mobilization tools are approaches in which communities and/or programs periodically analyze and feed back program and health information to communities, with the hope of stimulating appropriate community reflection and action. In child health, this concept is part of UNICEF's Triple A Approach and has been incorporated into the AIN integrated child health and nutrition program in Honduras. A Save the Children project in Bolivia, described at the Forum, uses the SECI Community Action Cycle to strengthen community and district collaboration in planning, action/monitoring, and evaluation.

A second approach to formative research is a process planned and carried out by the organization that will later manage the interventions (or by a research group it has contracted). While some of the research methods that may be used are quite participatory and may be designed to avoid findings being too researcher-directed, the researchers, rather than the community, are still in charge and it is they who interpret and decide how to use the information gathered.

Many of the projects presented utilized standard tools for formative research – in-depth interviews, focus group discussions, body mapping, KABP (Knowledge, Attitudes, Behaviors, and Practices) surveys.

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Who should take these actions?

Few participants believed that either health systems or communities alone should take all of the actions to improve maternal survival and health. It seems clear that maternal survival in particular requires competent, accessible, and acceptable services that are appropriately utilized by the public. While some aspects of improving maternal health are feasible without the direct participation of health services (e.g., improving maternal nutrition and micronutrient status; some methods of birth spacing), health services normally play an essential role in these and other actions to enhance maternal health.

On the other hand, none of these services is of any value without appropriate demand and utilization on the part of pregnant women and influential family members. It was widely agreed that health services should not be defined and organized solely by physicians and public health specialists. A number of program examples were presented (e.g., in Bolivia and Peru) in which community perceptions and preferences regarding the quality of care were, to some degree, incorporated into health services, with promising impacts on services utilization. In Bolivia, for example, knowledge that families wanted the placenta for traditional burial, prompted some hospitals to promote returning the placenta to the families.

Box 1—Approaches & Tools for Behavior Change *(continued)*

A few additional promising approaches were:

Trials of Improved Practices (TIPs)
For maternal health and survival, these behavior trials have been used to test strategies, counseling, and adherence to taking iron tablets; and increasing consumption of calories, nutrients, or special foods for pregnant women. They could potentially be very helpful for designing behavior-change strategies for provider behaviors, mothers' behaviors related to prenatal care and self-care, mothers' and birth attendants' behaviors related to birth hygiene and neonatal care; and mothers' and families' behaviors regarding birth preparedness. Rare or unpredictable behaviors, as well as ones that take too long to complete, are not easily tested by TIPs. For maternal health, these include: (1) recognition and immediate care-seeking during obstetrical emergencies or (2) communities providing transport for emergencies.

Doer/Non-doer or Positive Deviance Approach
TIPs are particularly helpful if few or no people are currently carrying out the desired practices. If some people are, programs may consider using formative research techniques that identify people who are like their group in general (e.g., poor mothers from a particular ethnic group) but who are carrying out the desired (healthful) behavior. The analysis focuses on why they are different from their peers in this, why their motivation is stronger or what strategies they use to overcome barriers that are holding others back.

One approach for doing this is the "elicitation methodology," which employs a short series of open-ended questions, based on a synthesis of major behavior change theory to "elicit" the key consequences, circumstances and main people who influence doing a particular behavior. Through content analysis, responses of doers and non-doers of the behavior of interest are analyzed by frequency to identify the "differentiating determinants" that might be addressed by an intervention. These questions are:

What good things happen when you _____? (e.g., take an iron tablet every day)

What bad things happen when you _____?

What makes it easy to _____?

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Box 1—Approaches & Tools for Behavior Change *(continued)*

What makes it hard to _____?

Who would approve of your doing _____?

Who would disapprove of your doing _____?

Do you _____? (e.g.,take an iron tablet every day).

Diagnostic Drama and Dialogue

Another promising diagnostic tool that the CHANGE Project is currently developing is called Diagnostic Drama and Dialogue. The basic idea is to ask people to put on a drama about some situation such as a woman in labor developing a particular problem. The drama is used to generate in-depth discussion among a wider audience. It is hoped that this tool will capture insights on normal behavior in unusual situations, perceptions, concepts, gender relationships, etc. that would be difficult and laborious to uncover through in-depth interviews and impossible to observe.

Approaches for Formulating Behavior-Change Strategies

Two general points in structuring behavior-change strategies seemed to resonate with participants: (1) plan strategies to promote feasible behaviors (determined through in-depth research), which are not necessarily the same as ideal ones from the medical/public health viewpoint; and (2) in organizing a strategy, consider not only communication activities but also training, service-delivery improvement, policy change, etc. Also consider the extent to which change is needed at various levels in order to support change at the primary level (normally either mothers or providers). Levels may include mothers, family or household, community, institution, and policy/government levels.

Approaches for Sustaining Behavior Change

While there is no particular "tool" for sustaining behavior change, a strategy and ongoing monitoring (including self-assessment by providers and facilities) and other actions at many levels are likely to be needed for some time. Once community and advocacy groups outside of the program take on important behaviors as their cause, these behaviors have a much better change of becoming social norms and of being sustained.

Self-Care and Care-Seeking: Decision-Making for Maternal Health and Survival

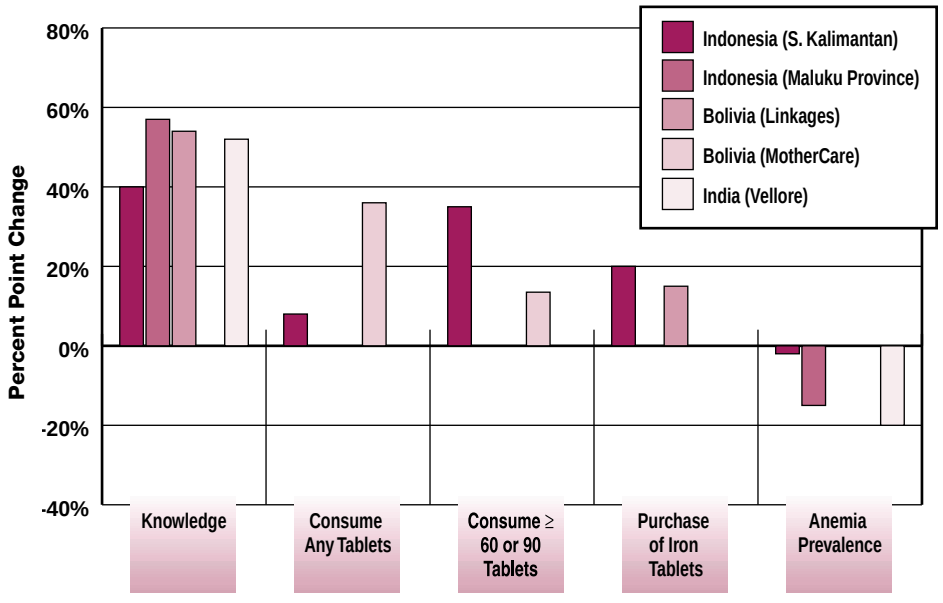
Anemia Prevention & Control

While problems of maternal nutrition status encompass a range of macro- and micronutrients as well as a range of long- and short-term intervention strategies, the Consultative Forum (and the MotherCare Project) focused primarily on the issue of iron deficiency and anemia prevention and control.

At first glance, the problem and its solution appear relatively simple. Women in most settings have difficulty in meeting the raised physiological needs for iron during pregnancy and lactation, and therefore they need to take iron supplements during this stage of their lives. Relative to the unique behavioral aspects of addressing the rare event/emergency situation of an obstetric complication, taking iron tablets should be a straightforward, even mundane, behavior to communicate and support. Yet, the national experience in India, with its failure to reduce the nation's high levels of maternal anemia despite a decades-old national policy for provision of iron supplements to pregnant women, underscores the complexity of this "simple" intervention.

Several speakers during the Forum highlighted the wide range of barriers (behavioral, cultural, institutional, structural) to providing essential information to women, maintaining a reliable supply of supplements of good quality, and facilitating women's adherence to daily supplements as well as improved dietary intake of bioavailable iron. However, there is emerging evidence across countries of a number of strong motivational factors that *support* the desired behavior of iron supplement consumption during pregnancy, such as women's positive response to mitigation of symptoms of anemia, their desire to improve the health of the

Figure 1.1—Impact of Anemia Prevention & Control Strategies in Five Projects on Changes in Knowledge, Behavior, and Anemia Prevalence, 1995-1999



Sources:

Report on the Anemia Prevention and Control Component in the MotherCare Project, S. Kalimantan, Indonesia, August 2000.

S. Robinson. Working with Traditional Birth Attendants to Improve Iron Tablet Utilization by Pregnant Women: Maluku Province, Indonesia. MotherCare Technical Working Paper#8, Arlington, VA. September 1998.

S. Huffman. Presentation at the MotherCare/CHANGE/WHO Behavior Change Consultative Forum, June 2000.

MotherCare/Bolivia. Caminos de intervencion sustentable en salud. La Paz, Bolivia, 2000.

R. Abel, J. Rajaratnam, and V. Sampathkumar. Anemia in Pregnancy: Impact of Iron, Deworming, and IEC. RUHSA Department, Christian Medical College and Hospital, Vellore District, Tamil Nadu, India, 1999.

Figure 1.2—Impact of Anemia Prevention & Control Strategies on Changes in Knowledge, Behavior, and Anemia Prevalence, 1995-1999

Indonesia, S. Kalimantan Pregnant Women 1996-1999 (MotherCare)[1]		Results		
		Baseline	Post-Survey	Change (% points)
Knowledge and Counseling Behavior	Knowledge of action to treat anemia ("Get iron tablets")	1.9%	41.6%	40
Consume Any Iron Tablets; Dietary Intake of Iron	Pregnant women during pregnancy[2]	65.0%	73.1%	8
Purchase Iron Tablets	Obtained through private sector	0%	20%	20
Consuming ≥ 60 or 90 Tablets	Pregnant women	8.3%	43.5%	35
Anemia Prevalence	Pregnant women Hb<11 g/dL	45.8%	43.6%	-2

Indonesia, S. Kalimantan Newly-Wed Women Pilot Study July-August, 1998 (MotherCare)[3]		Results		
		Baseline	Post-Survey	Change (% points)
Knowledge and Counseling Behavior	Received counseling on anemia from religious affairs official	0%	52.7%	53
Consume Any Iron Tablets; Dietary Intake of Iron	Consumed iron tablets daily for 30 days	0%	56%	56
Purchase Iron Tablets				
Consuming ≥ 60 or 90 Tablets				
Anemia Prevalence	Non-pregnant women Hb<12 g/dL	23.8%	14.0%	-10

Indonesia, Maluku Province Pregnant Women 1996-1997 (Project Concern International)[4]		Results		
		Baseline	Post-Survey	Change (% points)
Knowledge and Counseling Behavior	Knowledge of specific symptom of anemia (dizziness) Knowledge of specific intervention to prevent anemia (iron supplements)	59% 26%	93% 83%	34 57
Consume Any Iron Tablets; Dietary Intake of Iron				
Purchase Iron Tablets				
Consuming ≥ 60 or 90 Tablets				
Anemia Prevalence	Pregnant women Hb<11 g/dL	29.2%	14.6%	-15

Bolivia (LINKAGES) Non-Pregnant Women, Santa Cruz July-December 1999[5]		Results		
		Baseline	Post-Survey	Change (% points)
Knowledge and Counseling Behavior	Knowledge of multivitamin supplement, *Vitaldia* (prompted/unprompted)	0%	54/88%	54/88
Consume Any Iron Tablets; Dietary Intake of Iron				
Purchase Iron Tablets	Purchase of Vitaldia	0%	15%	15
Consuming ≥ 60 or 90 Tablets				
Anemia Prevalence				

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[1] Report on the Anemia Prevention and Control Component in the MotherCare Project, S. Kalimantan, Indonesia, and August 2000.

[2] Comparison baseline/post survey data from MotherCare/Indonesia Final Meeting presentation by Idrus Jus'at, March 2000, Indonesia.

[3] I Jus'at, et al. Reaching Young Indonesian Women through Marriage Registries: An Innovative Approach for Anemia Control. Journal of Nutrition 130: 456S-458S, 2000.

[4] S. Robinson. Working with Traditional Birth Attendants to Improve Iron Tablet Utilization by Pregnant Women: Maluku Province, Indonesia. MotherCare Technical Working Paper#8, Arlington, VA. September 1998.

[5] S. Huffman. Presentation at the MotherCare/CHANGE/WHO Behavior Change Consultative Forum, June 2000.

Figure 1.2 *(continued)*—Impact of Anemia Prevention & Control Strategies on Changes in Knowledge, Behavior, and Anemia Prevalence, 1995-1999

Bolivia 1996-1999 (MotherCare)[6]		Results		
		Baseline	Post-Survey	Change (% points)
Knowledge and Counseling Behavior				
Consume Any Iron Tablets; Dietary Intake of Iron	Pregnant women consume 30 tablets	26.2%	62.1%	36
Purchase Iron Tablets				
Consuming ≥ 60 or 90 Tablets	Pregnant women consume ≥90 tablets	6.0%	19.5%	13.5
Anemia Prevalence				

Vellore, S.India[7] Pregnant Women and Non-Pregnant Adolescent Girls 1996-1998 Rural Unit for Health and Social Affairs (RUHSA), Christian Medical College and Hospital		Results		
		Baseline	Post-Survey	Change (% points)
Knowledge and Counseling Behavior	Knowledge (adolescents) of iron supplements as prevention of anemia	0%	52%	52
	Knowledge (pw) of recommended daily dosage (1 IFA tablet)	65.7%	80.7%	15
	Knowledge (pw) of low iron intake as cause of anemia (intervention vs control)	95.4%	45.3%	50
Consume Any Iron Tablets; Dietary Intake of Iron				
Purchase Iron Tablets				
Consuming ≥ 60 or 90 Tablets				
Anemia Prevalence	Pregnant women Hb<11g/dL	70.3%	50.4%	-20

Peru Non-pregnant Women and Adolescent Girls Participating in Community Kitchens, Peri-Urban Lima 1996-1997 (Instituto de Investigacion Nutricional)[8]		Results		
		Baseline	Post-Survey	Change (% points)
Knowledge and Counseling Behavior				
Consume Any Iron Tablets; Dietary Intake of Iron	% Recommended daily requirement of dietary iron, (FAO/WHO, 1989)			
	✦ Adult women	53%	71%	18
	✦ Adolescent girls	48%	59%	11
Purchase Iron Tablets				
Consuming ≥ 60 or 90 Tablets				
Anemia Prevalence				

6 MotherCare/Bolivia. Caminos de intervencion sustentable en salud. La Paz, Bolivia, 2000.

7 R. Abel, J. Rajaratnam, and V. Sampathkumar. Anemia in Pregnancy: Impact of Iron, Deworming, and IEC. RUHSA Department, Christian Medical College and Hospital, Vellore District, Tamil Nadu, India, 1999.

8 H. Creed-Kanashiro, et al. An Intervention to Improve Dietary Iron Intake among Women and Adolescents through Community Kitchens in Lima, Peru: Final Report. MotherCare/JSI, Arlington, VA. 1998.

baby, and a wish to improve dietary quality. Communications messages and programming interventions have built upon these enabling factors.

Some presentations also provided evidence of encouraging experience/experimentation with pharmaceutical industry partnerships for parallel supply/distribution of iron supplements. Going outside of the traditional health distribution framework enables women and their families to act on knowledge and awareness of the condition of anemia during pregnancy, and independently surmount supply obstacles commonly found within the public sector system.

Select results for increased knowledge about iron deficiency and anemia during pregnancy by women as well as the magnitude of change for several key behavioral outcomes of anemia control/prevention interventions are provided in **Figure 1** on pages 7-9. Not surprisingly, increasing knowledge is accomplished more easily than changing behavior.

Improving Decision-Making, Preparation, and Care Seeking for Obstetric Complications

Unlike anemia, a chronic problem that is incurred over a lengthy period, obstetric complications happen relatively rapidly and require timely management by a skilled birth attendant or appropriate referral service. Delayed care-seeking at home during an obstetric emergency can result in death, particularly in the case of postpartum hemorrhage for which the time period between onset of postpartum hemorrhage and death has been estimated as two hours. Influential family decision-makers, including women, may delay seeking appropriate care due to barriers posed by a lack of information and/or access as well as poor perceptions of the quality of care offered. Decision-making and care-seeking for obstetric complications can be improved by developing strategies that support women and influential family members to recognize the danger signs of complications, evaluate them as triggers to appropriate care-seeking, and encourage and facilitate the development of life-saving plans for potential emergencies. Below are descriptions and outcomes of select strategies aimed at enhancing two critical aspects of birth planning (recognition of major obstetric complications and contingency planning) by women and families in order to prevent maternal deaths.

Recognition of Major Obstetric Complications

Recognizing a complication when it occurs involves more than simply being aware of the danger signs of the complication. Some examples of the barriers to timely recognition of complications mentioned at the Forum included:

- Low levels of awareness of danger signs of complications,
- Lack of distinguishing characteristics of the danger signs of some complications that are situated along a continuum between normalcy and emergency, and
- Existence of beliefs associated with complications in some settings that affect the interpretation of their severity and the decision to respond appropriately.

Participants noted the challenges of providing technical messages to facilitate diagnosis of obstetric emergencies by lay individuals. Since complications are rare events, the information to facilitate diagnosis by lay individuals would need to be understood, retained and recalled at the time of the complication. Confounding the diagnosis of a complication may be the interpretation of the problem, based on local beliefs and knowledge. In Bolivia, *sobreparto* is an illness that is well known locally and that is similar to puerperal sepsis; however, despite local knowledge of the severity of *sobreparto*, beliefs associated with its non-medical etiology preclude use of institutional health care. Similarly, in Ghana, 64% of women who had died of pregnancy-related complications had sought help from a herbalist, soothsayer, or traditional provider before going to a health facility due to their interpretation of the problem and due to cost-related factors.[2]

Participants noted the need for formative research, focusing on terminology and beliefs regarding complications as well as the barriers and enablers to care seeking, to develop effective strategies to influence timely recognition of complications and appropriate care-seeking. Strategies

[2] M. Favin. Presentation at the MotherCare/CHANGE/WHO Behavior Change Consultation Forum, June, 2000.

Table 1—Impact of Strategies to Enhance Recognition of Major Obstetric Complications on Women's Knowledge of Hemorrhage in Bolivia and Indonesia, 1996 – 1999

Interventions to Enhance Recognition	Knowledge of Hemorrhage* (Women)		Difference/ Change in Knowledge
Bolivia	Control (N=300)	Intervention (N=300)	
Radio soap opera	12 – 21%	15 – 29%	0.4 - 10%
Indonesia	Baseline Survey (N=884)	Post-Survey (N=1360)	
Interpersonal communication/counseling by village midwives, radio spots, and print materials	4– 5%	12 – 21%	7 - 17%

*Ranges result due to questioning regarding ante- and post-partum hemorrhage.

Sources: MotherCare Bolivia IEC Evaluation, 2000; MotherCare Indonesia Final Report, 2000

that have been utilized to enhance the ability of women and influential family members to recognize complications in Safe Motherhood programs include mass media, interpersonal communication and counseling through health providers and health workers, and community mobilization and participatory strategies. The audiences for these strategies include not only women but also their husbands or partners and influential family members.

Select results from two countries of the impact of strategies to enhance recognition of major obstetric complications, focusing on women's awareness for hemorrhage, are provided in **Table 1**. Women's awareness for hemorrhage improved but remained below 30% in evaluations conducted in these countries after the implementation of strategies. The percent point differences/changes in spontaneous recall of hemorrhage as a serious complication range from approximately 1 to 17 percent.

Contingency Planning

Messages focusing on actions required for contingency planning have been communicated via mass media, innovative participatory strategies, and interpersonal communication. Details of the varying approaches utilized to facilitate life-saving planning by families in Bolivia, Indonesia, and Bangladesh are provided below. Results of the evaluations of the impact of strategies in Indonesia and Bangladesh are highlighted in **Table 2** on page 12.

In Bolivia, a radio soap opera, counseling by providers, print materials, and community strategies were utilized to stimulate preparation for emergencies in terms of identifying appropriate referral facility and making arrangements for transport, potential costs (services and medicines), and care of children and the home. Innovative emergency drills, involving both community members and health providers, proved to be an effective mechanism to practice and develop the skills necessary to plan for emergencies.

In Indonesia, village midwives used a contingency planning leaflet for counseling pregnant and postpartum women. This leaflet portrayed an influential community leader encouraging families to become familiar with referral locations and to make financial and transport arrangements for emergencies. Approximately 8-10% of pregnant and postpartum women interviewed in the post-survey reported having seen and discussed the contingency planning leaflet with a village midwife or their husband.

Birth planning by families is being promoted in Bangladesh through interpersonal communication and a pictorial birth planning card that includes messages about knowing appropriate facilities, making arrangements for transport, and planning costs and other necessary resources (e.g. blood transfusion). Health workers counsel women and influential family members three times during the pregnancy. Results of a small survey demonstrated that saving money for an obstetric emergency by the family is the most common practice, followed by making arrangements for transport and being able to name an appropriate referral hospital. Few families make arrangements for a potential blood transfusion by identifying compatible donors.

Some participants noted that reaching and counseling husbands/partners and other influential male decision-makers about contingency planning, either separately or with women, remains a challenge. In addition, strategies that promote contingency planning could also benefit from exploring and investing in the following areas: individual

Table 2—Impact of Contingency Planning Strategies on Actions of Women and Families in Indonesia and Bangladesh

Interventions	Behavior/Behavioral Category	Magnitude of Reported Behavior		Level/Difference
Indonesia Village midwives counseling of women using a contingency planning leaflet	Seen contingency planning leaflet	Post-survey (N=1348) 21%		21%
	Seen and discussed with village midwife	8%		8%
	Seen and discussed with husband	10%		10%
Bangladesh Health workers counseling pregnant women three times using a birth planning card	Savings/generation of small emergency fund at family level	Control* (N=91) 25%	Intervention* (N=128) 95%	70%
	Organization of emergency transport	0%	35%	35%
	Preparation for emergency blood transfusion	0%	5%	5%
	Knowledge of appropriate hospital	7%	40%	33%

* Small-scale survey of 128 women who had delivered in the previous year and had been introduced to birth planning and 91 women who had not been introduced to birth planning

References: MotherCare Indonesia Project Final Report, 2000; CARE Bangladesh Safe Motherhood Project Evaluation Report, 2000

and community self-efficacy, existing communication patterns in families, and access to resources.

Use of Skilled Care

Using MotherCare's complementary strategies of promoting behavior change (specifically knowledge of danger signs and where to go for skilled obstetric care), and improving the skills of front-line providers to manage safe birth and manage or refer complicated cases, both coverage with a skilled birth attendant for labor and delivery (or use of a health care facility) and met need[3] increased in Guatemala and Bolivia. In Indonesia, use of a skilled birth attendant increased significantly although met need remained the same.

These results, shown in **Table 3**, reveal that in Guatemala and Bolivia, the patient profile changed in the health facilities, with women with complications making up a larger proportion of the clients. As no other interventions were occurring in Guatemala, it is likely that the MotherCare interventions played a role in this increase in women with complications seeking care. In Bolivia, a national insurance scheme paying for all maternal and newborn care that went into place simultaneously with MotherCare interventions, confounds the association. Costs are typically a major barrier to seeking professional delivery assistance and use of such care increased throughout the country, not just in project sites, in response to the new insurance.

In Indonesia, while use of skilled birth attendants in the home increased, use of hospital services remained the same over the time of the interventions and Cesarean section rates actually declined. An economic crisis that swept the country beginning in 1997 most likely had a major deterring effect on use of hospital care due to the high fees.

While it is difficult to identify what specifically contributed to the observed changes in use of a skilled birth attendant in all three countries, communications activities were critical components of the broad range of interventions that contributed to the increase in utilization of services by women experiencing obstetric complications in Guatemala and, most likely, in Bolivia.

[3] Met need is defined as the proportion of women estimated to have major obstetric complications who are managed at facilities with comprehensive EOC during a defined time period. The numerator is based on the number of women with major complications who present at hospitals (or who develop them while in hospital) and the denominator is an estimate of how many women at the population level are expected to have a major complication (15% of live births).

Table 3—Percent of Increased Use of Health Facilities or Skilled Birth Attendants (SBA) for all delivery care and for complications, MotherCare areas of Guatemala, Bolivia and Indonesia, 1995-1999

Country	Coverage: Use of a SBA				Met Need			
	Time 1	Time 2	Change Points	Percent Increase	Time 1	Time 2	Change Points	Percent Increase
Guatemala (3 Departments) 1995 – 1999	7	11	4	53	15	25	10	67
	6	9	3	38	6	9	3	38
	15	20	5	38	8	15	7	95
Bolivia 1996 – 1999	19	31	12	63	10	30	20	200
Indonesia 1996 – 1999	37	59	22	57	1.1*	0.7*	-0.4*	0*

*Used population-based Cesarean section rate as Met Need

Improving Relationships Between Providers and Clients

Efforts to improve quality of care have focused largely on improving the technical knowledge and skills of health care providers. Yet as much in need of attention are improvements in interpersonal skills and relationships between providers and clients. Quality of care can be improved in order to make the services more acceptable to clients by:

- interventions to improve interpersonal skills of providers,
- accommodation of neutral and beneficial cultural beliefs of communities in service delivery, and
- participatory methodologies that define the quality of care from the community perspective.

Interpersonal relations between providers and clients can be improved by training providers to practice certain skills during their sessions with clients, such as:

- greeting and welcoming client,
- active listening/encouraging client to ask questions,
- attitude (e.g. toward local traditions and beliefs and/or clients in general),
- body language,
- speaking style,
- providing information about exams, and
- re-scheduling a follow-up/next appointment.

The interpersonal communication and counseling (IPCC) training evaluation (observation and checklist) in Indonesia demonstrated an improvement in the interpersonal skills of village midwives. The mean IPCC scores of trained village midwives (78%) were significantly higher than untrained midwives (54%). However, the mean scores declined over a period of time. Mean scores for IPCC-trained midwives decreased from 78% at three months after training to 64% at 15 months after training. The specific IPCC skills that declined and required reinforcement were those that were new skills: active listening, providing information about physical exams, and scheduling a follow-up/next appointments. A source of reinforcement for the IPCC skills of village midwives was the Life Saving Skills training they received after the IPCC training.

Some interpersonal skills improved and were practiced after IPCC training in Bolivia, yet other skills did not improve. The latter included listening, reflecting, and answering questions politely, among

others. In an effort to make services more client-centered, providers also agreed to adopt certain cultural practices important to the community for childbirth (e.g. returning the placenta, keeping the pregnant woman warm, allowing choice of position for delivery) and were more likely to mention these to users of health services.

Presentations during the Forum highlighted the influence that client involvement, expectations, and demands can exert on the behavior of providers:

- In Bolivia, provider training in interpersonal counseling was accompanied by messages focusing on the rights of clients to quality care.
- In Nepal, exposure of both providers and clients to a radio intervention resulted in a higher mean score for IPCC behaviors than the mean score obtained with exposure of one group only.
- A community mobilization strategy in Peru enabled community members and providers to develop participatory videos in an effort to reach a consensus on the definition of "quality" and to generate action plans to improve the quality of care. The alliance between providers and communities resulted in an improved communication between providers and clients and also increased utilization of public health services by indigenous community members in project areas.
- Joint committees of community representatives and providers in both Peru and Bangladesh have proved to be a viable and effective mechanism to coordinate activities and monitor the quality of care in a more equitable manner.

Participants noted that in certain settings or circumstances, IPCC training or consumer accountability are not enough, especially where the interaction between providers and clients is marked with abusiveness, fear, and mistrust. In a Bangladeshi district hospital, for example, the concepts of birth pollution, gender roles, and social hierarchies are important for understanding the sub-standard care women receive from the hospital staff. In such settings, the improved interactions between providers and clients will occur only if interventions address the social context in which provider-client interactions take place.

Conclusions

Expectations for the magnitude of behavior change possible in public health projects/programs must be realistic.

In general, projects/programs should not expect dramatic changes in behavior in a short time (1-2 years). Even well-designed, research-based strategies, implemented with dedication and imagination —such as several presented at this Consultative Forum—generally could measure relatively modest changes in behavior over a two- or four-year period. Details regarding the impact of public health projects on selected behavioral outcomes of interest can be found in **Table 4**. The measurable impact of projects/programs on key behaviors confirms the difficulty of the task and the need to sustain actions and continue modifying them over time on the basis of feedback from program monitoring. In some cases, the maximal impact of projects/programs may only become evident after the

Table 4—Levels and Differences/Changes in Knowledge and Desired Behaviors for Select Public Health Projects

	Levels of Knowledge (Baseline/Control)	Difference/Change in Knowledge (Percentage points)	Levels of Desired Behavior (Baseline/Control)	Difference/Change in Behavior (Percentage Points)
Self-Care: Anemia[1]	0-59%	34-57%	Consumption (any) 26-65% Consumption (≥60 or 90 tablets) 6-8%	8-36% 14-35%
Maternal Survival[2]	Hemorrhage 4-21%	1-17%	Use of Skilled Birth Attendant for Delivery 6-37% Use of Obstetric Services for Complications (Met Need) 1-15%	3-22% 0-20%
Pneumonia[3]	13-45%	4-17%	Cases treated in health facilities 18%	Cases treated in health facilities 3% Cases treated in the community 30%
Vitamin A[4]	57%	12%	Consumption 24%	17%
Family Planning[5]	High	—	Contraceptive Prevalence Rate (CPR) 25-48%	5-7%

Sources:

[1] MotherCare Anemia Projects [Indonesia (South Kalimantan), Indonesia (Maluku), Bolivia (LINKAGES), Bolivia (MotherCare), India (Vellore)]

[2] MotherCare Integrated Maternal Health Projects (1995-1999) in Bolivia and Indonesia for knowledge indicators and Bolivia, Guatemala, and Indonesia for behavioral indicators

[3] Nepal Child Health Program, 1997-2000 (personal communication)

[4] HealthCom Vitamin A Capsule Intervention, Indonesia (1988-1990)

[5] JHUCCP Family Planning Projects: Philippines Communication Outreach (1993-1996) & Egypt's Gold Star Quality Program (1995-1997)

behaviors being promoted become social norms.

The goals for changing behaviors in public health programs need to be aligned with those of the commercial market sector, which may be content with an approximate 10 percent gain in market share[4]. One meta-analysis exploring the impact of communications campaigns on behavior found that campaigns had small effects[5]: An average of 9 percent more individuals in intervention communities than control communities changed their behavior. This analysis also found that it was easier to promote the adoption of a new behavior, such as the use of seatbelts, than to change an old and addictive one, such as smoking.

Stimulating improvements in individual behavior require actions at many levels, one of which is improving knowledge.

Knowledge for maternal self-care (anemia; iron supplements) and survival (danger signs of major obstetric complications) can be improved. For maternal survival, improvements in the knowledge of danger signs of major obstetric complications are modest when compared to the improvements in knowledge of maternal self-care (e.g. anemia). The task may be more challenging for maternal survival since knowledge of medical danger signs is usually low, while knowledge of anemia and its prevention is generally higher.

However, knowledge does not readily translate into behaviors. Behaviors associated with maternal self-care (anemia) and survival are complex, requiring inputs at several levels. For maternal care related to products (e.g. iron supplements for anemia), changes in knowledge (e.g. iron supplements can correct anemia) are often greater than changes in behavior (daily consumption of iron supplements during pregnancy). This is similar to the experience in the field of family planning, where awareness far exceeds the use of contraceptives. Details of indicators (knowledge, behavior) from select public health projects are presented in Table 4.

It is clear that women's intransigence is not the primary cause of iron supplementation program failure. While women do frequently experience temporary side effects from the supplements, project results presented at the Consultative Forum demonstrate that the majority of women do not discontinue iron due to side effects. Participants agreed that focusing on a single "layer" of behavior change for improved prevention and control of maternal anemia is insufficient. With a commodity-based intervention such as consumption of iron supplements, changing individual women's behaviors without addressing both provider and supply system issues/behaviors dooms a program to failure.

The complex set of behaviors associated with care-seeking for major obstetric complications are also influenced by both major environmental constraints and service barriers (real and perceived lack of cultural acceptability, kind treatment, and technical competence). When communication strategies are combined with interventions to ease environmental service constraints and improve both the technical and non-technical dimensions of the quality of care, the impact on care-seeking behavior is likely to be greater.

Improving the ability of families to recognize major obstetric complications is challenging.

The impact of strategies aimed at improving the knowledge of women and influential family decision-makers regarding danger signs of major obstetric complications has generally been modest, since the initial levels of medical knowledge of danger signs are quite low. The rarity of obstetric complications, coupled with the lack of distinct symptoms for certain complications and the influence of local knowledge and beliefs regarding illness, pose challenges to the effectiveness of strategies for improving recognition of major obstetric complications by families.

There was a strong concern among some participants that in some settings, the barriers are so great to mothers and families recognizing danger signs and seeking and receiving appropriate care on time that implementers may wish to reconsider this intervention.

[4] Communication with Martin Fishbein at the Behavior Change Consultative Forum.

[5] Snyder et al. Meta Analysis of Health Communication Campaigns to Change Behavior: Methodological and Behavioral Factors Affecting Success. International Communication Association Annual Meeting, May, 1999.

Influencing the behaviors and performance of existing and/or new cadres of providers is essential to projects/programs focusing on maternal self-care and survival.

Disinterested or overburdened health workers are consistently identified as major barriers to iron supplementation program success. Motivating existing or new cadres of service providers to take more active interest in the problem of anemia, as well as enhancing and supporting counseling and supplement distribution skills was nearly universal among the projects.

Experience has shown that providers are willing and able to instill a client-focus to the care that they provide. The interpersonal counseling skills of providers are also instrumental for motivating families to improve their decision-making and actions for maternal health and survival. For a new cadre of providers, such as skilled birth attendants, good interpersonal skills and sensitivity to the needs and customs of clients are crucial to their acceptability and use by the community.

Recommendations

Do your homework—invest in the formative research phase

The foundation of effective projects/programs is formative research, employing a range of qualitative and quantitative methodologies. The results of this research identify the barriers and enablers to optimal behavior (e.g. maternal anemia prevention and control and appropriate care-seeking for maternal health and survival) in a specific situation. They also inform the selection of key target audiences, focus and content of communications messages, and the specific interventions to change/enhance behaviors of concern to improved iron status and reduction/prevention of maternal anemia as well as to maternal health and survival.

Address the context that facilitates individual behavior change

Experience has shown that behaviors are influenced by more than knowledge and other cognitive determinants. Many individual behavior changes require actions that address the other levels of behavior change (family, community, institutional, political) that facilitate and interact with individual behavior change. For example, the enabling environment surrounding women and their families profoundly influences both the decisions to take iron supplements as well as the necessary behaviors to persevere with the daily regimen.

Communications can provide women and influential decision-makers (e.g. husbands, mothers-in law) with information on danger signs of an illness, severity, logistics, and reasons to act, but just giving information is rarely enough to change key behaviors related to maternal health and survival. While information may influence some of the determinants of behavior (e.g. self-efficacy, intention to act, skills), communications must normally work in tandem with such strategic components as training, policy change, service delivery improvements, collective (community) action, and possibly product development and promotion (e.g. birth planning card, home birth kit).

Don't minimize the role of communities and culture when designing programs/projects to enhance maternal health and survival

Partnerships between communities and services are critical for stimulating use of services for maternal health and survival. In settings where health services and communities are separated by social class, ethnic and cultural traditions, improving the non-technical dimensions of quality of care may be as essential as improving the technical dimensions to stimulate use of services. Incorporating client and community/cultural perspectives in defining the quality of care in the early stages of projects and programs will maximize the possibilities of ensuring that services are improved to be more responsive to the needs and customs of clients and communities. This may mean modifying service hours, reducing waiting times, increasing privacy, allowing access of family members to patient

rooms, returning the placenta to the family for burial/disposal, etc. In addition, the interpersonal communication and counseling (IPCC) skills of providers should be addressed and reinforced as rigorously as clinical skills in training programs, since they may require significant shifts in provider attitudes and perceptions.

Anemia Prevention & Control

Consider involving the private sector

A pilot study of the social marketing of multivitamin supplements in Santa Cruz, Bolivia, and a private-sector strategy in Indonesia demonstrate that many women and their families are willing and able to purchase multiple micronutrient supplements and iron tablets, respectively, at a reasonable cost.

Expand the target group to include adolescents

Relative to older women participating in an education intervention study in Peru, adolescents demonstrated greater increases in knowledge and improved nutrition practices. Programs should exploit the potential for significantly contributing to women's improved nutrition and health status by reaching adolescents with preventive services prior to the beginning of their childbearing years.

Decision-Making for Maternal Survival

Focus behavioral strategies on maximizing the role of skilled birth attendants (where available) in decision-making

In areas where skilled birth attendants are available, we recommend that the primary messages to families focus on creating demand for the use of skilled birth attendant for labor and delivery and whenever there is a problem. Perhaps reducing the medical specificity required for diagnosing complications by families is best in these circumstances.

Where skilled birth attendants are not easily accessible, perhaps the best strategy is to focus on teaching families when the woman must go or be taken to a facility where skilled care can be provided. Effective strategies to enhance recognition of major obstetric complications by families and attendants should focus on "triggers" for action during an obstetric emergency and also integrate medical information on danger signs with local terminology and beliefs associated with obstetric complications.

Appendix 1—Meeting Participants

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